

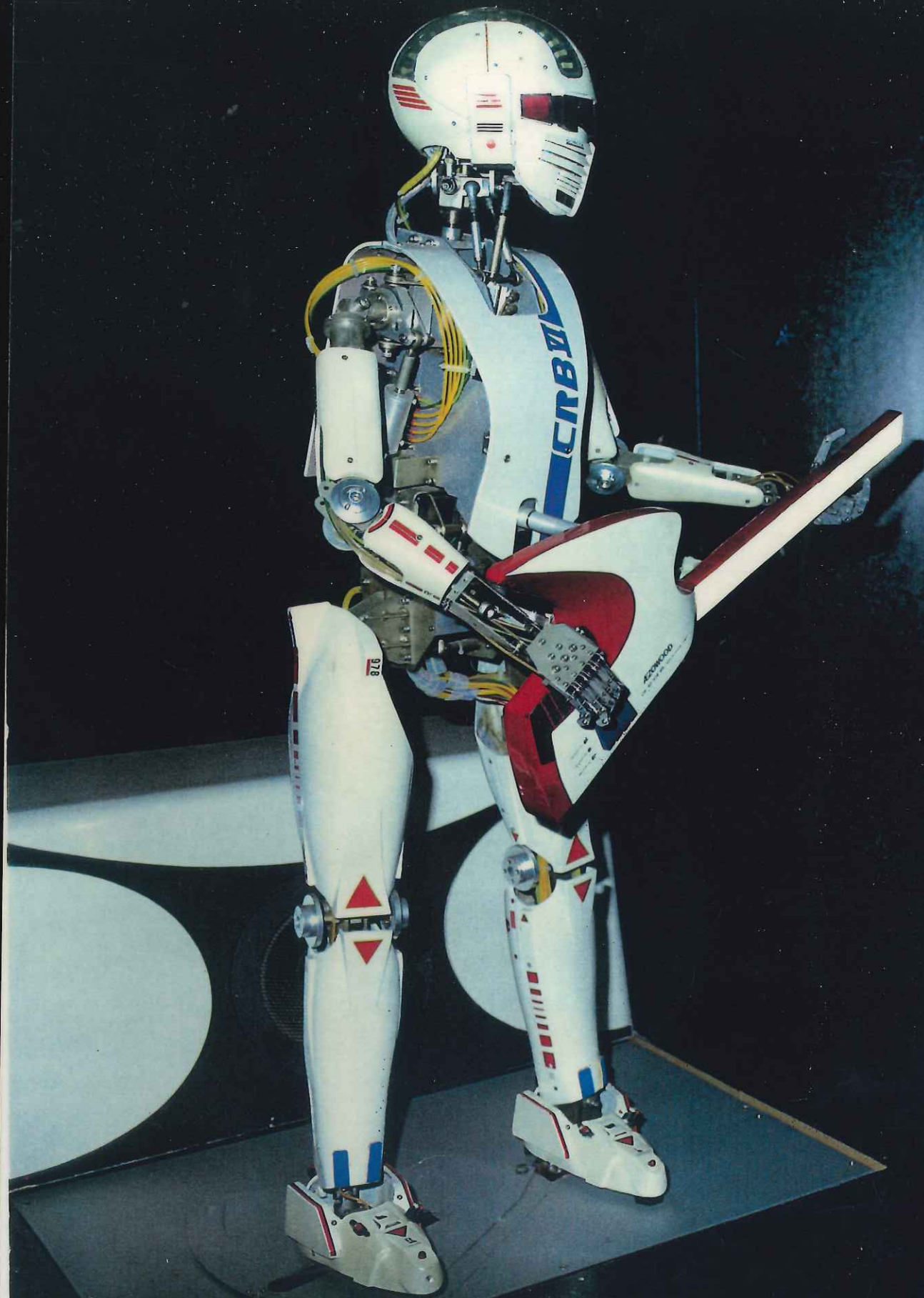


TE HANGARAU HURI NOA

Technology around us

Learning Media Te Pou Taki Kōrero
Wellington Whanganui ā Tara
Item number 94/228

WELCOME
Thrillseekers
DUE TO THE EXCITEMENT
A RIDE INVOLVED BY
THE USE OF 200 METRE
PER SECOND WINDS & FREE
FALL
HEART CONNECTION



A vertical timeline on a wall, featuring various years and names. The years are listed in red text, and the names are in blue text. The timeline is set against a dark background with star patterns.

1712	
1728	1801
1765	1808
1782	1830-71
1788	1835
1878	1868
	1913



























Griffin's SCUIT-BAR

Griffin's SCUIT-BAR product display featuring:

- Salada Original
- Chocolate Chip
- Mallo
- Milk Chocolate
- Mint Slice
- Tim Tam
- SHAPES BARBECUE
- SHAPES BARBECUE

MANAKI

Child in a red and black patterned cardigan and purple pants.

Shopping cart contents:

- Leafy greens
- Red tomatoes
- White cauliflower
- Orange juice
- Ice cream cones
- Oranges

twisties 4 x 10 x 60g
twisties 4 x 10 x 60g
twisties 18 x 130g
twisties 18 x 150g

Fam's Products at the Lowest Possible Price
Top Quality at the Lowest Price

Ice cream display with various flavors.

Refrigerated section containing:

- Ice cream tubs (e.g., Vanilla, Strawberry)
- Beef dripping
- Orange juice bottles

I whakaputaina tēnei pukapuka mo
Te Tāhuhu o te Mātauranga
e Te Pou Taki Kōrero, Pouaka Poutāpeta 3293,
Te Whanganui ā Tara, Aotearoa.

Mana pupuri © te Karauna 1994
Pūmau te mana. Nga tono ki te kaiwhakaputa i te pukapuka.

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Nama take 94/220

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TE HANGARAU HURI NOA

Hei Whakahaere Mahi

Ko nga whakaahua katoa
na Karen Angus.

Te Pou Taki Kōrero
Te Whanganui ā Tara

He Whakatuwheratanga

I roto i tēnei ao hurihuri kia mārama tonu a tātou tamariki ki te whanake ki nga āhuatanga kei te wātea mo te mahi hangarau. I whiwhi nga tūpuna i te kaha mo te hangarau waka hei tere i Te Moana nui ā Kiwa, me te apo ki nga rawa o te takiwā hou i kitea e rātou i konei. I te taenga mai o tauīwi, he tere te takatū ki nga kaupapa, me nga taonga mahi a te Pākehā, he pērā anō hoki nga manene ki nga kaupapa hangarau a te Maori. Ināianei, kua mahi kē a tātou tamariki ki nga āhuatanga e pā ana ki te hangarau o te ao ātea, mehemea e rere atu ana rātou ki Poihākena i runga i te waka rererangi, e haere ana rānei kia kite i tētahi whakakitenga mīhini karetao i tētahi whare taonga o te rohe, ki te whakawera rānei he kai i roto i te umu ngaruiti, ki te whakamahi rānei nga taonga hiko hei whakareri rākau mo te whakairo.

Kua kitea ko te mahi hangarau tētahi o nga wahanga e whitu kei te akona i roto i *Te Anga Marautanga o Aotearoa*:

He mea whakawhanake te mātauranga hangarau i te whānuitanga o nga pūkenga, tae noa ki ērā o te hīraurau hopanga, te hoahoa, te hanga, te whitiwhiti whakaaro, te whakaaro kaikini, te whakaaro wetewete, te whakahiato whakaaro, me te aro mātai. (whārangi 13)

Ko te pūtaiao, te pāngarau, te ohanga kāinga, te tikanga ā iwi, te hangarau papamahi, te pūoro, nga toi, te whakairoiro me te hoahoa, me te whakamātau pūnaha mohiohio, he kaupapa marau e pā ana ki te mahi hangarau.

Ko te tāhere whakaahua tekau mā ono, me nga tuhituhi ma nga kaiako, e para ana i te huarahi ki te whakaako te kaupapa mo te mahi hangarau, mai i nga mahi hangarau kua mahia e nga tūpuna i te ao tawhito, tae noa mai ki tēnei ao o te rorohiko me te mahi hangarau, hei whakawhanake kia mārama ai nga tāngata katoa i roto i ēnei mahi āwhina.

Iti te kōpara, iti te mokoroa,
Ka hinga te rākau whakaharahara
o te wao nui a Tāne.

Whakaahua 1

Ko tēnei whakaahua e whakaatu ana i nga aronga o waenganui o te ao Maori, te wharenuui, me te marae, natemea, koinei te oranga o te iwi. Tāpiri atu ki te rōpū kei mua o te wharenuui e pōwhiri ana, e poroporoaki ana; ētahi o nga āhuatanga e pā ana ki nga iwi.

He mahi ma nga tamariki:

- me tā he wharenuui, ka whakaingoa nga wāhanga;
- mehemea ka whakaea, tāhia nga whakairo o te iwi o te rohe;
- tirotirohia nga heke o roto o nga wharenuui, me te āhua o nga tauira e pā ana ki nga koiiora;
- waihangatia tētahi whakaaturanga hei whakatāpiri atu ki tētahi mahi puoro, he tauira, arā, he waiata ā ringa;
- rapuhia nga kōrero mo nga taonga puoro whakatangitangi (titiro ki *Te Wharekura 41*, he pukapuka na Te Pou Taki Kōrero, ko te nama take 94/169);
- whakakao nga kōrero a nga tauira mo a rātou nei manakohanga mo te mahi puoro, a, ka whakarite nga momo puoro hei whakapaoho i runga i te rohe irirangi o te rohe.





Whakaahua 2

Mai i to rātou taenga mai ki tēnei whenua, ka toroa e nga tūpuna o nga Maori me pēhea te whakamahi nga weu māhorahora i roto nga mahi kākahu, hao ika, mahi whare, me te hangarau kai. Ko ēnei tikanga ā iwi kei te mau tonu. He mahi ma nga tamariki:

- me pātai atu ki tētahi kuia mai i to rātou nei takiwā, mo nga kawa, me nga mahi e pā ana ki te harakeke; hei tauira, arā, te mahi raranga, me nga mahi rongoā;
- rapuhia mo te takatū harakeke me nga tikanga ā iwi mo nga mahi tae;
- rapuhia nga mahi e pā ana ki nga mahi whai;
- akona nga mahi raranga, arā, ki te raranga he kono;
- rangahautia nga rerekētanga o nga momo harakeke, me a rātou nei mahi;
- whakakaohia nga weu i te wā e hīkoi haere ana i waho, me te whiriwhiri i nga rawa, me te whakawhiti whakaaro me pēhea te whakamahi.

Whakaahua 3

I ohore nga tauwi tuatahi i tae mai ki Aotearoa nei, natemea, kātahi anō rātou ka kite nga whiwhinga rerekē e pā ana ki te iwi Maori mo te hangarau ika. Ko te pai o te Maori e mātau ana rātou ki nga tikanga o te moana, a, e āhei ana te Maori ki te āta tiaki i nga rawa o te moana.

He mahi ma nga tamariki:

- me tonu atu ki nga pakeke o to rātou nei rohe kia haere mai ki te ako ki a rātou nga tikanga e pā ana ki te whakawhāiti kaimoana, me te āta tiaki i nga rawa o te moana, arā, mo te rāhui;
- me rapu nga tawhiti tawhito, nga taruke ika, me nga kupenga i whakamahia e nga Maori ki te hao nga momo ika katoa;
- pātai atu ki te iwi Maori mo a rātou whakaaro ki te whakatū he umanga whakatipu kaimoana;
- kimihia he pēhea nga Maori ki te mahi ika huahua/tohu me te whakaaro anō, i pēheatia e rātou te tohu ēnei momo kai, he aha a rātou taonga i aua wā hei tohu i ēnei kai, a, me te maumahara anō hoki ki nga wahanga hao ika o te tau.



Whakaahua 4

Te hangarau whakairo e noho tūturu ana ki nga tāne Maori anake. Ka whakaputa te iwi i to rātou mana whakairo mai i nga pare, nga pou whakairo, me nga whare. Motuhake te waihangatanga i nga toki me nga whao, i mahia mai i ētahi pōhatu, arā, ki te whakairo i nga momo papanga, tae noa atu ki te pounamu, te pōhatu, me te rākau, i mua noa atu i te taenga mai o tauwi. No te whakamōhiotanga mai o nga taonga whakairo a te Pākehā, ka kaha kē atu te mahi whakairo i tērā rau tau.

He mahi ma nga tamariki:

- mai i nga papanga kua ōti kē te whakamahi tahi, i nga poronga rākau rānei, waihangatia he waka, kātahi ka whakamātautauria;
- rapaina tētahi taonga whakairo, kātahi ka rapu atu no nahea i hangaia, a, no hea hoki te whanaketanga, a, he aha i tīnīhia ai te āhua o tēnei taonga me te take i tīnīhia ai;
- mahia he pānui e whakaatu ana i nga āhuatanga tūturu mo te turaki rākau, a, mo te turaki rākau hoki i tēnei ao hou;
- me tā he tauira o nga tika me nga hē mo te whakamahi i nga taonga whakairo, a, ka rapa atu nga kawa e tika ana i te wā kei te mahi whakairo te Maori;
- haere ki te whare taonga o tōu rohe, ka tauira nga taonga whakairo tūturu;
- me whakairo he manu, he hanga tangata, ētahi atu hanga rānei, mai i te tāhoata.



Whakaahua 5

Ko te manaaki manuhiri ka noho tonu he taonga hira ma te iwi Maori. Ko nga pūkenga mo te mahi hāngi kaore anō kia tīni, ahakoa he rerekē ētahi o nga papanga, me nga kai, kei te mētia ki rō hāngi. Ko te tikanga ā iwi mo te tao kai i rō hāngi he taurira tino pai ki te whakautu nga tikanga hangarau. I roto i nga rohe Waiāriki, ka taohia nga kai i roto umu ma te mamaoa.

He mahi ma nga tamariki:

- kōrero ki nga tohunga mo nga kawa e pā ana ki te mahi hāngi, i mua i te tirohanga ki nga papanga pai hei whakamahi, me nga wahanga;
- whakaarahia he pūrongo kōrero mo nga wahanga e pā ana ki te mahi hāngi;
- rapaina atu nga momo kai o te ao tawhito mai ki nāiane, kei te taohia i rō hāngi;
- whiriwhiria nga whanaketanga o te hangarau hāngi; hei taurira, arā, te whakamahi i nga pahikete mētara, me nga pēke, me nga āhuatanga tao kai i huria hei whakatao kai ki te waiāriki mamaoa;
- whakaritea te hangarau hāngi ki nga umu o Nga Moutere o Te Moananui ā Kiwa;
- me whakahiato he pukapuka kai Maori.



Whakaahua 6

Ko te wheako tuatahi o te mahi hangarau a te tamariki, arā, ko te whakareri me te tuari kai i waenganui i o rātou whānau.

He mahi ma nga tamariki:

- whiriwhiria he aha a rātou kai mo te wā parakuihi, ki te whakapukeke nga kai e kaingākauria ana, me te tā he rārangi kai, tāpiri atu ko nga kai tino pai ki a rātou;
- me whakakao he kōrero mo nga kai whakakīki hanawiti, me mahi he huahuatanga i roto i te karaehe;
- mahia he parāoa parai;
- me whiriwhiri nga hangarau mo te rerekētanga o te tao kai;
- me whakaahua nga āhuatanga o te mahi parāoa.

Whakaahua 7

I roto i te whanaketanga o te tamariki, he hira te akohia ki te tiaki i o rātou tinana me a rātou ake taonga. I roto i te tipunga ake o te mahi hangarau o tēnei ao hou, kua kore te mahi horoi kākahu he mahi taumaha, whakapau kaha rānei, e mōhiotia ana e a tātou wahine o nga rōpū iwi.

He mahi ma nga tamariki:

- kōrero mo nga huarahi rerekē mo te horoi kākahu;
- pātai atu ki nga kairaranga o te rohe he pēhea rātou ki te horoi nga korowai tawhito, me nga kākahu;
- whiriwhiria ko ēhea nga hopi teretere e whakamahia ana e rātou i o rātou kāinga, a, mehemea he pai anō ēnei mea ki te taiao;
- whakaritea te whanaungatanga painga mo te whakamaroke kākahu i waho, me te whakamaroke kākahu i rō mihini whakamaroke kākahu;
- tauratia he pine kākahu;
- whakaatuhia nga pānui motuhake mo nga kākahu mai i te wā e mau ana te tangata, ki te wā horoi, ki te wā whakamaroke, me te wā e tohutia ana.



Whakaahua 8

Ko te whakakao kai he mea tawhito pēnei tonu i te tangata nei. I mauria mai e nga Maori na rātou i toro tēnei whenua, a rātou kai, a rātou taonga, a rātou kararehe, a rātou tikanga, me o rātou nei mōhiotanga, me pēhea ki te apo nga rawa tūturu e mōhio ana rātou, e kore mōhio ana rātou, i roto i te taiao. Ko nga mahi hangarau o tēnei rau tau rua tekau, kua tīni kē nga āhuatanga whakawhiwhi kai, engari, mau tonu te mahi whakakao kai, he oranga mo te tangata.

He mahi ma nga tamariki:

- tirohia nga ara mo te tohu huawhenua, huarākau rānei, i te kāinga, i rō toa hokohoko rānei;
- rapuhia ko ēhea nga kai e kaingākauria ana kei te toa ā rohe;
- rārangitia nga kai e whai wāhi ana ki nga rōpū ā iwi, arā, pēnei i nga tamariki kōhungahunga, nga manene rānei o te whenua o Āhia;
- me waihanga he momo takai hei tari i nga kai o te hāngi;
- me waihanga he kaupapa mo te hoko a rātou kai o te hāngi, ka tāpiri nga utu, me ētahi atu mea, arā, hei tauira, tērā pea he inu kore utu mo ia hāngi kei te hokona;
- mahia he pānui e whakaatu ana nga kai tūturu e tipu ana i o rātou nei rohe, hei tauira, ko nga kaimātaitai, he hua rākau, a, he pēhea ki te hauhake ēnei kai, mehemea ka taea, me pēhea ki te tohu ēnei kai;
- pātai atu ki o rātou kaitiaki mo nga āhuatanga kua tīni mai i nga kai e kai ana, me nga tikanga tao kai, arā, me āta titiro ki nga kai e tere nei ki te tao, me te whakaurutanga mai o te ngaruiti, a, he pēhea te whakaawe i o rātou oranga;
- haere kia kite i tētahi wheketere mahi kai.



Whakaahua 9

I roto i nga mahi pāmu kua tīni te potapōtae o te whakamahi whenua i Aotearoa. Na te huanga wūru, ka puta ake nga rawa mai i nga whenua o nga iwi.

He mahi ma nga tamariki:

- rapuhia he pēhea te whanaketanga o te hangarau kuti hipi;
- kimihia te rerekētanga o nga momo wūru, a, he pēhea ki te mahiti wūru;
- ketua nga rawa ārai o te wūru;
- me waihanga tētahi mea mai i te wūru;
- kōrero mo nga rawa, me te whakamahi i nga weu, me nga miro, he tauira, arā, ko te harakeke me te wūru;
- waihangatia he momo kākahu mo te wā o te hōtoke, me ētahi atu hua ka taea te whakamahi mai i te wūru, i te weu rānei;
- kōrero mo nga hua ka taea e rātou te mahi mai i nga weu.



Whakaahua 10

Ko tēnei whakaahua e whakaatu ana nga momo haere e toru. No te taenga mai o te hoiho ki Aotearoa nei, tere tonu te huri o te iwi Maori ki tēnei, hei tāpiri atu ki nga waka awa, me te haere ma raro.

He mahi ma nga tamariki:

- kōrerorero mo nga take mo te whanaketanga i nga momo waka;
- kōrero mo nga kai me nga whare mo nga kararehe, me te tiaki hoki i nga taonga pērā i nga tera me nga paraire;
- rapua nga utu e pā ana ki nga momo haere e toru;
- rapuhia he pēhea te pahikara ki te mahi, arā, tana waihanga, tae noa atu ki te oranga ngākau, ki te whakatūpato, me nga papanga i whakamahia ki te waihanga tēnei momo waka; rangahautia te whanaketanga o nga pahikara rēhi;
- rapaina ko ēhea nga momo pahikara hira kei roto i o rātou kura, me te take he aha i pērā ai, a, ka whakamahi ēnei kōrero hei waihanga pānui;
- akona nga nekeneke o nga waka, mai i te kāinga ki te kura, ka whakauru atu nga āhuatanga pai ake ki nga whakawhitinga waka, nga piriti, nga rama ārahi, me nga ara hiko;
- waihangatia he nuka maru mo tētahi pahikara.



Whakaahua 11

Kaore anō te wā whakatā kia whakaritea mai i te hangarau: ko Disneyland, nga mīhini tākaro ātea, nga kai tere ki te tao, ko te katoa o tēnei ao o te rau tau rua tekau, e tere nei i raro katoa i te hangarau.

He mahi ma nga tamariki:

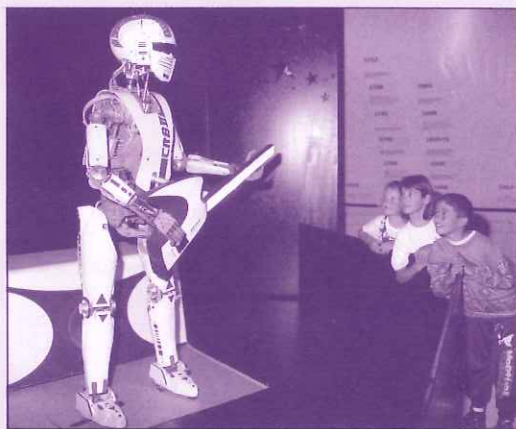
- tātaria nga topana kei te pupuri i te waka tarawa i runga i tana ara rino, me te ārai hoki i te tangata kia kore ai rātou e taka ki waho i te wā e koaro ana;
- me whakarangahau he rārangi kōrero hei titiro ki te wahanga whakarurutanga mo te waka tarawa;
- whiriwhiria te wahanga hangarau e pā ana ki nga mahi takakau me nga mahi tākaro;
- me toro atu ki te whakawhanaunga o nga wahanga oreore, ki nga wahanga kaore e oreore ana, o te waka tarawa me ētahi atu taonga hanganga. Hei tauira, arā, ko te papa wīra, ko te tarawa mata rānei.

Whakaahua 12

Neke atu te mōhio o a tātou tamariki ki o rātou mātua, tīpuna rānei, ki nga āhuratanga o te mahi hangarau i tēnei ao. Kia hira ake a tātou tamariki ki te ako, ki te apo ki te wā hangarau, a, kia mārama rātou ki nga ariā e pā ana ki to rātou nei ao.

He mahi ma nga tamariki:

- titirohia ka tohu nga wahanga o tētahi aonui hiko;
- tuhia ētahi tohutohu mo te waihanga i te mīhini karetao ki te mahi i tētahi mahi, he tauira, arā, ki te whakatangi tangi kitā;
- tirohia ko ēhea nga tākaro rorohiko e kaingākauria ana e te karaehe;
- me whiriwhiria mehemea ka taea te mīhini karetao te whakakapi te tūnga o te tangata i roto i nga wāhi mahi;
- whakahiatotia he pūrongo ā rōpū mo nga aonui hiko e whakaaro ana rātou he whai painga ma nga kaiako, mo a rātou mahi rānei;
- whiriwhiria mehemea ka taea nga mīhini rorohiko te whakakapi nga kaiako;
- haere ki tētahi wheketere kei te whakamahi mīhini karetao;
- whakaritea, a, waihangatia he tauira taniwha, me nga whatu e mārama ake ana;
- me uiui i tētahi pakeke mo nga āhuratanga kua finī mo nga aonui hiko, i tōna ake nei oranga.



Whakaahua 13

Ko te reo o te Maori he taonga, he tūturu, he reo manahau hoki kaore e taea te paetau mai e ētahi atu kōrero, reo rānei, natemea, koinei tonu nga mahi ki te tautoko nga tikanga a nga tāngata whenua. Ka whiwhi nga tamariki Maori i nga rongō e rua.

He mahi ma nga tamariki:

- me whiriwhiria he pēhea te Maori ki te whakaheke kōrero ki ētahi atu o te iwi, i mua i te taenga mai o te pukapuka, a, he pēhea i mau ai nga kōrero me nga hitori o ia iwi i roto i nga whakairo o nga wharenuui;
- whakaritea nga huanga pai mo te tuku kōrero ā waha, i rō pukapuka, i runga rānei i te rorohiko hōtuku;
- me waihanga he kōwhaiwhai hei tauira kāri, hei tauira upoko reta;
- whiriwhiria me pēhea e taea nga tamariki te hanga me te tā he pānui mai i te kura;
- huraina nga whakamāramatanga i roto i nga pakiwaitara tuku iho, arā, te tere rawa a te haere a te rā, kātahi ka tito ētahi atu whakamāramatanga me tā hoki a rātou kaupapa.



Whakaahua 14

Ko nga awa nga araara o te whenua. Ko nga awa nga huarahi mo nga waka, mo te kai, mo te hiko, me nga tākaro pūangi. Kua riro kē nga painga tawhito o nga awa e whakawhiwhi nei i te iwi i te kai, me nga huarahi hei whakatere waka, i nga takiwā o nga taone nunui nei, engari, e mau tonu ana tēnei tū āhua i roto i a tātou nei tikanga, me te tuakiri o ia iwi ki tōna ake awa.

He mahi ma nga tamariki:

- mahia he pānui motuhake e kōrero ana mo nga momo kai kei te mau tonu i raro i a tātou tikanga kei roto i nga awa o Aotearoa;
- āta tirohia nga tikanga tawhito mo te hopu tuna me nga tikanga takatū o nāianei;
- waihangatia he nuka hopu tuna;
- rangahautia nga tāngata kua toromi mai i to rātou nei rohe;
- waihangatia he pānui mo nga whakatūpatotanga mo te wai;
- kōrerorero i pēheatia ka taea te whakamahi wai kia puta kē mai he hiko, me nga āhuatanga o tēnei mahi hangarau e pā ana ki te taiao.



Whakaahua 15

I te wā e tākaro ana nga tamariki, kei te ako tonu rātou. I mua i te taenga mai o tauwiwi, he maha nga mahi a rēhia e mōhiotia ana e nga tamariki Maori, a, he maha nga taonga tūturu ā iwi i hangaia hei tākaro ma rātou. I kitea mai ētahi o nga taonga tākaro nei i nga tōpito katoa o te ao, ētahi he taonga ahurei kei te whakamahia tonutia i tēnei rā pēnei i te poi. He maha nga tikanga tākaro a te Maori kei te whakaoratia mai ināianei. Ko ēnei tākaro, hei whakawhanake mo te koi, mo te harataunga, mo te whakatautika, me te hihira o te hinengaro.

He mahi ma nga tamariki:

- me tonu atu ki tētahi kaiwhakataetae kia haere mai ki te kōrero mo nga pānga tākaro, me nga pukenga e hāngai ana ki ta rātou nei tākaro;
- me waihanga he ara taunahua, ka whakawhiti kaupapa ki te karaehe, a, me whiriwhiria ko ēhea nga wāhi pai ki nga tamariki, nga wāhi ka taea te whakapai ake, a, mehemea he ara whakaruru tēnei;
- me rangahau ko nga tākaro e kaingākauria ana, kei te whakaatu mai i runga i te pouaka whakaata, a, me te rapu atu e hia te roa o te wā kei te tukuna atu mo te whakaatu mai, a, ka whiriwhiri mehemea e whakaae ana rātou ki nga whakatau a nga kaiwhakarite mo ēnei kaupapa;
- mauria mai a rātou kaupeka, momo tākaro tino pai rānei, ki te karaehe, ka waihanga he pikitia o nga mea tino pai ki nga tamatāne, a, ki nga kōtiro hoki;
- rapaina nga tākaro Maori tūturu, ka whakaako ki ētahi atu karaehe kia taea ai te whakatū he rā motuhake mo nga tākaro Maori anake.



Whakaahua 16

I mua noa atu i te taenga mai o te Pākehā, he tino mahi te noho hopuni ki te whakakao kai i nga wahanga hauhake o te tau.

He mahi ma nga tamariki:

- rapuhia nga tikanga hoahoa a te Maori mo te waihanga wharau tūturu, kātahi ka waihanga he wharau;
- rapuhia nga papanga i whakamahia mo te waihangatanga tēneti hou;
- whakaritea he aha nga mea hei mauranga mo te haere ki te hopuni mo nga rā e toru, a, he aha ai; whakaritea nga rārangi taonga hei mauranga, a, whakangarahutia he rārangi taonga hei mau ma nga tāngata e haere ana ki te hopuni;
- waihangatia he taonga mo te tōhi parāoa i runga i te ahi i te hopuni;
- tirohia nga kōrero e pā ana ki nga pake marangai e mau ana te Maori o te ao tawhito;
- tāia he pukapuka mo nga kai tawhito a te Maori ka taea te whakakao mai i te ngahere.



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TE HANGARAU HURI NOA

Hei Whakahaere Mahi

Introduction

In a rapidly changing world, our children need to develop an understanding of technology and the opportunities it can offer. The tūpuna possessed the technological prowess to build craft which would navigate the vast expanse of the Pacific, and to exploit the rich new environment which they discovered here. When Europeans arrived, people were quick to adapt the new ideas and tools of the Pakeha, just as the newcomers utilised elements of Maori technology. Now our children experience space age technology, as much when they fly to Sydney in a jet, visit a robot exhibition at a local science museum, or heat up a takeaway meal in a microwave, as when they use power tools in preparing timber for mahi whakairo.

Technology has been identified as one of the seven essential learning areas in *The New Zealand Curriculum Framework*:

Technology education develops a wide range of skills, including those of problem solving, design, construction, communication, critical thinking, analysis, synthesis, and evaluation. (page 13)

Science, mathematics, home economics, social studies, workshop technology, music, art, graphics and design, and the study of information systems are all curriculum subjects in which technology plays a part.

This pack of sixteen photographs and the accompanying teachers' notes offer primary school students an opportunity to study the role of technology within their lives, from the highly streamlined techniques and tools of pre-European stone age technology to the sophistication of computer age technology, and to develop their understanding through a range of activities.

Iti te kōpara, iti te mokoroa,
Ka hinga te rākau whakaharahara
o te wao nui a Tāne.

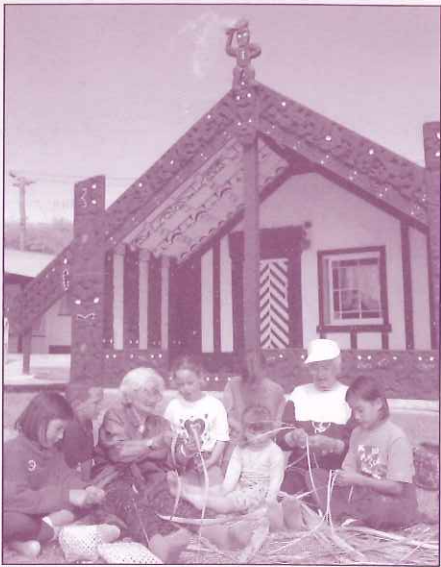
Photograph 1

This photograph displays central aspects of te ao Maori, the whareniui and the marae, around which the life of the iwi flows, together with the group in front of the house summoning up those ceremonies of greeting and farewell which mark in a formal way the experience of the people.

Children could:

- draw a whareniui and name its parts;
- with permission, draw the carving designs specific to their local iwi;
- investigate Maori rafter patterns especially those relating to flora and fauna;
- develop a display or performance to accompany a Maori musical activity, for example, waiata ā ringa;
- find out about Maori musical instruments (see *Te Wharekura 41*, published by Learning Media, item number 94/169);
- collect information about students' musical preferences and make recommendations about music to be played on the local radio station.





Photograph 2

From their arrival in this country, the ancestors of the Maori explored the uses of a wide range of natural fibres in clothing, fishing, housing, and food technologies. These traditions are still retained.

Children could:

- ask kuia from their local area about the protocol and multiple uses of harakeke, for example, in weaving, and medicinal uses;
- find out about the harvesting of harakeke and traditional dyeing methods;
- find out about whai or string games;
- learn to weave a simple item such as a kono;
- research different types of harakeke and their uses;
- collect fibres during a walk outside, discussing their properties and sharing ideas about their possible use.

Photograph 3

Early European visitors to this country were astonished at the complexity of Maori fishing technologies. The affinity with the sea and the ability to exploit its resources wisely is still an integral part of Maori life.

Children could:

- invite local kaumātua to teach them about the customs involved in the gathering of kaimoana, and conservation of the resource, that is, rāhui;
- find out about the traditional traps, fishpots, and nets used by Maori to catch different types of fish;
- survey the Maori community about the development of an aquacultural farm based on kaimoana;
- find out ways in which Maori preserve fish, taking into account storage, equipment, and seasons.



Photograph 4

Carving technology has traditionally been the province of men in Maori society. Iwi express their mana in finely carved pare, pou whakairo, and whare. Specially shaped adzes and chisels of particular types of stone were used to carve a variety of materials including pounamu, stone, and timber in pre-European times. The introduction of Pakeha tools meant the art flourished in the nineteenth century, as it does today.

Children could:

- design and fashion a boat out of recycled materials or timber offcuts, and test these out;
- find out about a tool, where and when it was developed, and how and why the design has changed;
- make a chart illustrating traditional and modern methods of tree felling;
- make drawings of correct and incorrect ways to use cutting and carving tools, and find out about the customs which Maori observe when engaged in carving;
- visit a local museum and make drawings of traditional tools;
- carve a bird, a figure, or some other shape from pumice.



Photograph 5

Manaaki manuhiri remains an important responsibility for iwi Maori. The skills in putting down a hāngi have not changed, although the materials and foods used may have altered. Eating traditional foods cooked in a hāngi is a fine example of the use of traditional technology. In thermal areas, steam is used to cook food in an umu.

Children could:

- talk to experts about the protocol involved in mahi hāngi, before investigating the best materials to use and the steps involved;
- present a report about the steps to be taken in preparing hāngi;
- find out what sorts of food were and are cooked in hāngi;
- discuss developments in hāngi technology, for example, the use of metal baskets and sacks, or the adaptation of cooking methods to exploit an energy source such as steam;
- compare hāngi technology with a Pacific Islands umu;
- compile a recipe book of Maori food.



Photograph 6

Children's first experience of technology at work is typically the preparation and sharing of food in their families.

Children could:

- discuss what they eat for breakfast to determine the most popular foods, and then draw a menu including their favourite breakfast foods;
- collect data about favourite sandwich fillings, and make a class graph;
- make paraoa parai;
- discuss different cooking technologies;
- make a photographic record of the bread-making process.

Photograph 7

Learning to care for themselves and their personal belongings is an important part of children's development. With the development of modern technology, washing is no longer the arduous and exhausting task it once was for women in our society.

Children could:

- talk about the different ways of washing clothes;
- ask local weavers how traditional cloaks and clothing are cleaned;
- discuss which cleaning detergents they use at home, and whether these are environmentally friendly;
- compare the relative advantages of drying clothes outside and using a clothes drier;
- design a clothes peg;
- display flow charts to show what happens to clothes as they progress from wearing, washing, drying, and storage, as part of a caring for clothes investigation.



Photograph 8

The gathering of food is as ancient as humanity. Polynesian explorers brought with them their tools, their cultivars, animals, and their understanding of how to exploit the resources of nature in familiar and unfamiliar environments. Twentieth century technology has transformed the techniques for obtaining food, but food gathering remains central to human survival.

Children could:

- investigate ways of keeping vegetables or fruit fresh, at home, or in a shop;
- find out which foods are most popular at their local shop;
- list the foods which are associated with different groups of people, for example, infants, immigrants from an Asian country;
- design packaging for a range of takeaway hāngi food;
- design a marketing strategy for selling their hāngi food, including costing, special offers (free drink with each purchase, for example);
- make a poster showing wild foods that can be gathered in their area, for example, shellfish or blackberries, and how these are harvested and, if possible, preserved;
- ask their caregivers about the changes in foods eaten and cooking methods, especially fast foods and the advent of the microwave, and how this has affected their lives;
- visit a food processing factory.



Photograph 9

Pastoral farming has transformed the ecology and land use in Aotearoa. Wool production provides an important economic return from tribally owned land.

Children could:

- find out about developments in shearing technology;
- find out about different types of wool and how wool is graded;
- explore the insulating properties of wool;
- make something from wool themselves;
- talk about the properties and uses of fibres and yarns, for example, harakeke and wool;
- design a winter garment, or any other product, using wool or other fibres;
- talk about how their product made from fibre can be used.



Photograph 10

This photograph illustrates three different forms of transport. When the horse was introduced to New Zealand, it was quickly adopted by Maori to supplement travel by waka and on foot.

Children could:

- talk about the reasons for the development of different types of transport;
- discuss food and housing for animals, and care of equipment such as saddles and bridles;
- find out the relative costs of the three forms of transport;
- find out how a bicycle works and study contemporary design, including comfort, safety, and the materials used in manufacture; or research the development of racing cycles;
- find out which are the most popular types of bike in their school and why, and use this information to design an advertisement;
- study traffic movements between home and school and suggest improvements to intersections, bridges, traffic lights, and pedestrian crossings;
- design a security device for a bike.



Photograph 11

At no other time has leisure been so extensively serviced by technology: Disneyland, spacies, fast foods, the whole astonishing rollercoaster ride of twentieth century fun is all underpinned by technology.

Children could:

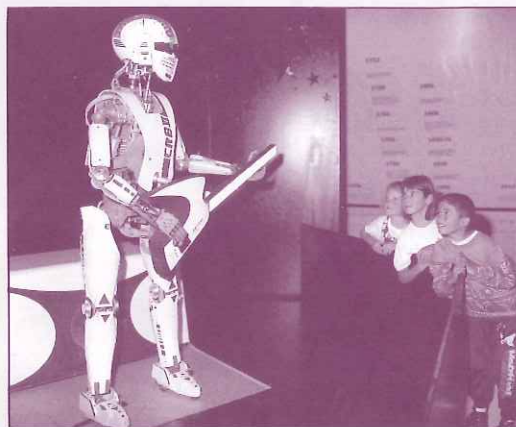
- analyse the forces which keep a roller coaster on its tracks and prevent people from falling out when it is upside down;
- devise a checklist of safety features for a roller coaster;
- discuss the role of technology in their leisure activities and in sport;
- explore the relationship between fixed and moving parts in a roller coaster, or other recreational equipment, for example, skateboard or rollerblades.

Photograph 12

Our children are beyond us in their familiarity with the technology of the space age. It is important that children learn to exploit contemporary technology and also understand its impact on their world.

Children could:

- locate and identify the parts of an electronic system;
- write a set of instructions to make a robot do a set task, for example, strum a guitar;
- survey the class to find out their favourite computer games;
- discuss whether they think robots should replace people in the workplace;
- compile a group report about the electronic devices or systems they think teachers need or would like in their work;
- discuss whether computers could replace teachers;
- visit a factory which uses industrial robots;
- plan and make a figure, for example, a taniwha, with eyes which light up;
- interview an adult about the changes they have observed in electronic devices and systems in their lifetime.



Photograph 13

The oral tradition of Maoridom is strong and resilient; it is a taonga. It has not been supplanted by other information media which are, however, utilised to support the indigenous tradition. Maori children inherit both systems of information.

Children could:

- discuss how information was passed down before the advent of books, and how the carvings in whareniui store the histories of a tribe;
- compare the advantages of transmitting information orally, through books, or on a computer database;
- make a stencil of a kōwhaiwhai pattern, and design cards and letterheads;
- decide how they will illustrate and print a school newsletter;
- discover the solutions to problems posed in traditional stories, for example, the sun travelling too fast, and then invent other possible solutions, drawing plans of their proposals.



Photograph 14

Rivers are the veins of the land. They provide transport, food, power, and recreation. The traditional uses of rivers as primary means of transport and major food sources have been overtaken by the demands of contemporary urban society, but rivers still have a very significant place in our culture, and tribal identity continues to be derived in part from awa.

Children could:

- make a chart describing the different types of food traditionally available in New Zealand rivers;
- investigate traditional methods of catching eels and how these have been adapted;
- design their own eel catching device;
- research drowning statistics in their area;
- design a water safety leaflet;
- discuss how the energy of moving water is harnessed to produce electricity, and what effects such technology might have on the environment.



Photograph 15

Children learn as they play. In pre-European times, Maori children had many different games and pastimes, and a wide variety of artefacts were made for children's play. Some of their toys and games are found the world over, some unique to this country are still used today, for example, poi. Many traditional games of the Maori are being revived. Games develop agility, dexterity, balance, and concentration.

Children could:

- invite a local athlete to tell them about the equipment and skills particular to their game;
- design an obstacle course, share their plans with the class, and discuss which features they like, possible improvements, and whether the course is safe;
- research the popularity of different sports on TV by finding out how much time is given to them, and discussing whether they agree with the programmers' decisions;
- bring their favourite toys or games to class, and use drawings of these to make a pictograph of the most popular ones for boys and for girls;
- find out about traditional Maori games, and teach other classes how to play them, so that the school can have a Maori games day.

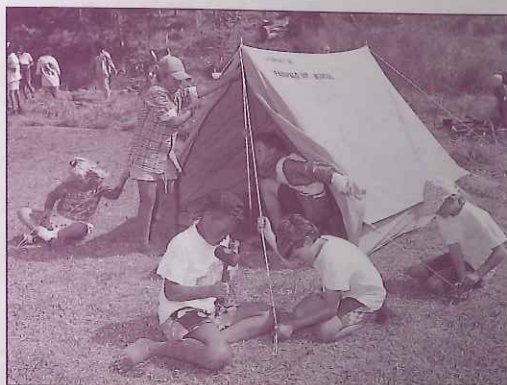


Photograph 16

Living in the open or in seasonal camps to gather particular foods was an important part of pre-European life.

Children could:

- find out about the design of traditional Maori shelters, and build their own wharau;
- find out about the materials used in the manufacture of modern tents;
- decide what they would need to take on a three-day camp, and why, compare their lists, and devise a checklist for campers;
- design and make an implement for toasting bread over a fire at camp;
- find out about the raincoats worn traditionally;
- make a handbook about traditional foods that can be gathered in the forest.



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